

REMARKS

Claim 55 was rejected under 35 USC 112, second paragraph, for the reason set forth at the middle of page 3 of the Office Action.

Claim 55 was amended to include a feature set forth on page 73, line 17 of the specification. This amendment avoids the 35 USC 112, second paragraph rejection. The amendment to claim 55 is set forth in the enclosed MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS.

Claims 23, 24, 28, 29, 32, 33, 35, 42, 43, 46, 47 and 53 were rejected under 35 USC 112, first paragraph, and 35 USC 132 for the reasons set forth at the bottom of page 3 and the top of page 4 of the Office Action.

It was alleged in the Office Action that certain terminology set forth in the claims is not supported in the specification. Applicants disagree with this allegation for the following reasons.

With respect to claim 23, calcium carbonate (CaCO_3) is supported in the specification on page 41, lines 13 and 23; page 42, penultimate line; and page 43, lines 11 and 22.

Concerning claim 24, slags containing Ca and MgO are supported in the specification on page 45, lines 19 and 20; page 45, lines 22 and 23; page 45, lines 25 and 26; and page 45, last two lines. Binders containing CaCO_3 and MgCO_3 are supported in the specification on page 41, lines 13 and 23; page 42, penultimate line; and page 43, lines 11 and 22.

Claims 28, 29, 42 and 43 were amended to replace "iron oxide"

with --oxidized iron-- (see page 57, line 26 and page 58, line 4 of the specification). The amendments to claims 28, 29, 42 and 43 are set forth in the enclosed MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS.

Regarding claims 32, 33, 46 and 47, "soluble silica" is supported in the specification on page 57, lines 23 and 24 and page 58, lines 3 and 25.

Claim 35 was amended hereinabove to insert --about-- before "10 to 70%". Such amendment is set forth in the enclosed MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS.

Claim 53 was amended to include a feature supported in the specification on page 72, line 6. The above amendment to claim 53 is set forth in the enclosed MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS.

It is therefore respectfully submitted that the present claims fully comply with all of the requirements of 35 USC 112 and 35 USC 132.

The presently claimed invention concerns an underwater immersion block produced by a method comprising:

(a) preparing a granular iron and steel making slag mixture;
and

(b) producing a carbonate by carbonation of the mixture to agglomerate the mixture by using the carbonate as a binder.

The presently claimed invention is also directed to a method of producing an underwater immersion block comprising:

(a) preparing a granular iron and steel making slag mixture;

(b) forming a packed bed of the mixture; and

(c) carrying out a carbonation of the mixture in the packed bed to agglomerate the mixture.

Claims 18, 19 and 21 to 55 were rejected under 35 USC 103 as being unpatentable over Knopf et al. (USP 6,387,174; USP 6,264,736), Alexandre (FR 2735804); Ebihara et al. (JP 55042216), JP 7048186; Gasik (SU 1084321), Kaminskas or Am Contractor 1907 (Marble and Stone from Slag) for the reasons set forth on pages 2 and 3 of the Office Action.

It was stated at the middle of page 2 of the Office Action that "Knopf et al. do not teach for use underwater yet he also does not teach that it cannot be used underwater". However, Knopf et al. do not disclose an underwater immersion block. In addition, Knopf et al. do not disclose the specific feature of an underwater immersion block that it must be durable when immersed in water.

In contrast to Knopf et al., the present invention involves a clear method of producing an underwater immersion block, which means a definite composition which results in material characteristics for an effective underwater immersion block. Such clear method for producing an underwater immersion block is described in the present specification on pages 54 to 57, items (1) to (5).

It was admitted in the Office Action that Alexandre does not teach underwater usage.

It was further admitted in the Office Action that Ebihara et al., JP 7048186, Gasik SU 108421, Kaminskas and Am Contractor

"would not appear to teach underwater usage".

None of the references disclose a method for producing an underwater immersion block.

It is therefore respectfully submitted that applicants' claimed invention is not rendered obvious over the references.

Reconsideration is requested. Allowance is solicited.

Submitted herewith is a REQUEST FOR INITIALED COPIES OF FORMS PTO-1449 AND PTO/SB/08A.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

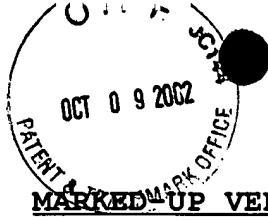
Respectfully submitted,



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Enclosures: (1) PETITION FOR EXTENSION
(2) MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS
(3) REQUEST FOR INITIALED COPIES OF FORMS PTO-1449 AND PTO/SB/08A



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MARKED UP VERSION OF THE AMENDMENTS TO THE CLAIMS
(SERIAL NO. 09/844,533)

28. (Amended) The underwater immersion block according to claim 27, wherein the granular additive comprises [an] oxidized iron [oxide].

29. (Amended) The underwater immersion block according to claim 27, wherein the granular additive comprises an oxidized iron [oxide]-containing material.

35. (Amended) The underwater immersion block according to claim 18, wherein the underwater immersion block has a porosity of about 10 to 70%.

42. (Amended) The method of producing the underwater immersion block according to claim 41, wherein the granular additive comprises [an] oxidized iron [oxide].

43. (Amended) The method of producing the underwater immersion block according to claim 41, wherein the granular additive comprises an oxidized iron [oxide]-containing material.

53. (Amended) The method of producing the underwater immersion block according to claim 52, wherein the carbon dioxide [is] comprises carbon dioxide which is blown into water to [saturated with H₂O] saturate the water.

55. (Amended) The method of producing the underwater immersion block according to claim 19, further comprising breaking the resultant agglomerated mixture from step (c) into [desired] sizes of 80 to 1500 mm.